

## WE CLAIM

1. An MPEG video encoder, said encoder comprising:
  - 5 a) means for analyzing statistics from a video stream;
  - b) means connected to said means for analyzing statistics, for determining if a scene change has occurred; and
  - c) means to create a modified video stream if a scene change has occurred.
- 10 2. The encoder of claim 1 wherein said means for analyzing statistics further comprises means for calculating the global complexity of a current frame within said video stream.
- 15 3. The encoder of claim 2, wherein the means to create a modified video stream codes said current frame as an I frame and codes the frame previous to said current frame as a P frame in said modified video stream, if a scene change has occurred and if said scene change is a scene cut.
- 20 4. The encoder of claim 2, wherein the means to create a modified video stream codes said current frame as a B frame in said modified video stream if a scene change has occurred and said scene change is a dissolve.
- 25 5. The encoder of claim 2, wherein the means to create a modified video stream codes a frame with the lowest complexity in a fade as a I frame in said modified video stream if a scene change has occurred and said scene change is a fade.
6. A method for creating a modified video stream, said method analyzing the frames of an input video stream to determine if a scene cut, dissolve or fade has occurred.
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7. The method of claim 6 wherein if a scene cut has occurred, at a current frame, coding said current frame as an I frame and coding the frame previous to said current frame as P frame in said modified video stream.
- 5 8. The method of claim 6 wherein if a dissolve has occurred, at a current frame, coding said current frame as a B frame in said modified video stream.
9. The method of claim 6 wherein if a fade has occurred, selecting a frame with the lowest complexity in the fade as an I frame in said modified video stream.
- 10 10. A computer readable medium containing instructions for creating a modified video stream, said instructions analyzing the frames of an input video stream to determine if a scene cut, dissolve or fade has occurred.
- 15 11. The medium of claim 10 wherein if a scene cut has occurred at a current frame, coding said current frame as an I frame and the frame previous to said current frame as a P frame, in said modified video stream.
- 20 12. The medium of claim 11 wherein if a dissolve has occurred at a current frame, coding said current frame as a B frame in said modified video stream.
13. The medium of claim 12 wherein if a fade has occurred, selecting a frame with the lowest complexity in the fade as an I frame in said modified video stream.
- 25 14. A method for improving encoder performance, said method determining if a fade has occurred in a video stream, if a fade has occurred, modifying said video stream by selecting a frame with the lowest complexity in the fade as an I frame in said video stream.

15. A system for improving encoder performance, said system having detection means to determine if a fade has occurred in a video stream, if a fade has occurred, utilizing means to select a frame with the lowest complexity in the fade as an I frame in said video stream.

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16. An MPEG video encoder, said encoder comprising:

a) a statistical analysis module for analyzing statistics from a video stream;

10 b) a scene change analysis module connected to said statistical analysis module for determining if a scene change has occurred; and

c) a modification module to create a modified video stream if a scene change has occurred.

15 17. The encoder of claim 16 wherein said statistical analysis module calculates the global complexity of a current frame within said video stream.

18. The encoder of claim 17, wherein said modification module codes said current frame as an I frame and codes the frame previous to said current frame as P frame in said modified video stream, if a scene change has occurred and if the scene change is a cut.

19. The encoder of claim 17, wherein said modification module codes said current frame as a B frame in said modified video stream, if a scene change has occurred and  
25 if the scene change is a dissolve.

20. The encoder of claim 17, wherein said modification module codes a frame with the lowest complexity in a fade as an I frame in said modified video stream, if a scene change has occurred and if the scene change is a fade.